

Research on Cold Chain Logistics of Fresh Agricultural Products

E-Commerce

Wenjie Fan, Xiaoli Zhu, Zongli Zhang

School of Finance and Economics, Qinghai University, Xining 810016, China.

Abstract: With the development of economy, people 's consumption demand has been upgraded, pursuing high quality and high safety of fresh food. At present, the development of cold chain logistics in China is lagging behind, and a unified standard logistics system has not yet been formed, which brings difficulties to the development of fresh e-commerce industry. This paper takes Daily Fresh as an example to analyze the problems existing in its cold chain operation, and explores the innovative mode of efficient and healthy development of cold chain logistics of fresh agricultural products, so that the fresh industry can better create customer value.

Keywords: Fresh Agricultural Products; Cold Chain Logistics; Daily Freshness

1. Introduction

In the 21 st century, science and technology, economy and other aspects are progressing, consumers pursue diversified and nutritious diets, and the fresh e-commerce industry is developing rapidly. However, the fresh e-commerce industry started late and the development of the cold chain system is not perfect. The state has also issued a series of policy documents, including 'Notice on Supporting the Construction of Agricultural Product Supply Chain System to Further Promote the Development of Cold Chain Logistics'. China has put forward stricter requirements for the high-quality development of cold chain logistics. Cold chain logistics is the core of the development of fresh e-commerce industry, so cold chain logistics has become an important breakthrough to solve the development problems of fresh industry^[2]. However, at present, China 's cold chain logistics industry is not yet mature, resulting in serious corruption in the transportation process of fruits and vegetables, affecting the national economic benefits and making it difficult for enterprises to develop^[3]. Therefore, the development of a healthy and efficient cold chain logistics system is of great significance for the development of the country and the industry.

2. The development status of cold chain logistics of fresh agricultural products in China

Before the analysis of cold chain supply optimization countermeasures, it is necessary to understand its development status, analyze the competitive environment of the industry, and provide basic support for the rational formulation of healthy development countermeasures. This chapter mainly analyzes from the national policy level and the industry level, which is general and representative.

2.1 Fresh e-commerce industry is fiercely competitive.

From the perspective of national policy, China 's cold chain logistics started relatively late compared with foreign countries^[4]. At first, the introduction of national policies was not perfect. In recent years, China has begun to strengthen research and investment in cold chain logistics related aspects from different levels, and more and more laws and regulations have ensured the construction of cold chain standardization system. In 2018, the Ministry of Transport issued the ' Implementation Opinions on Accelerating the Development of Cold Chain Logistics to Ensure Food Safety and Promote Consumption Upgrading ', the ' 14th Five-Year Cold Chain Logistics Development Plan ' issued by the General Office of the State Council in 2021, and the ' 14th Five-Year Modern Logistics

Development Plan ' issued by the General Office of the State Council in 2022. The state issued these regulations hoping to guide the healthy, rapid and efficient development of cold chain logistics from the overall level^[5].

2.2 The demand of fresh cold chain logistics market is increasing, and the competition of fresh e-commerce industry is fierce

From the perspective of fresh agricultural products e-commerce industry, the rapid development of information technology in the new era is applied to all aspects of life, and the pursuit of high convenience, high safety and high quality fresh food has become the mainstream, thus promoting the development of fresh cold chain logistics^[6]. According to the statistics of the professional logistics committee, the demand of China 's logistics industry is increasing year by year, and the demand for cold chain food will reach 325 million tons in 2022. The increase in demand has led many enterprises to see the huge development opportunities in the blue ocean field of cold chain logistics. Alibaba, Tencent, Jingdong and so on have entered the cold chain logistics industry. In 2022, the market size of China 's cold chain logistics industry will reach 450.5 billion yuan. Due to the high cost of cold chain logistics, low profit, intensified competition in the industry and other constraints, there are few head enterprises and it is difficult to achieve scale development. Therefore, the development of efficient and healthy cold chain logistics has become an important measure for enterprises to break through the predicament.

3. Problems existing in the daily fresh cold chain logistics mode

Daily fresh food is the head enterprise of fresh e-commerce. Combined with the above analysis, taking daily fresh food as a case, it is of great significance to study its unique cold chain logistics transportation.

3.1 Cooperation with suppliers is not close enough

In the process of product procurement, the daily fresh products are directly purchased by professional buyers all over the world. Most of them are short-term transactions and the number of purchased products is small. The relationship with upstream suppliers is unstable and the influence between each other is weak. It is not conducive to the development of the overall supply chain of daily fresh products, affecting the overall efficiency of the supply chain and increasing the procurement cost of enterprises. It is not easy to standardize the construction of cold chain logistics, thus affecting the consumer shopping experience, and it is difficult for enterprises to achieve profitability.

3.2 Lack of attention to the first kilometer

Daily Youxian is committed to upgrading and optimizing its own cold chain logistics supply model, but it ignores the optimization and construction of the origin warehouse of agricultural producers. At present, the number of agricultural producers in the initial stage of cold chain logistics is large, the scale is small, the infrastructure of the producing area is weak, and the cold chain logistics network is not perfect, which leads to the lack of standardization of fresh agricultural products and low production efficiency. Daily Youxian pays less attention to the ' first kilometer ' of fresh agricultural products.

3.3 The cost of the front warehouse mode is too high

According to the daily excellent fresh financial report, the daily excellent fresh net loss in 2021 was 3.850 billion yuan, and the net loss in the same period of 2020 was 1.650 billion yuan, with an increase of 133.33 % year-on-year. Its core business front warehouse has been in a state of loss. The daily fresh pre-positioned warehouse model is a capital-density investment, which is a model of heavy assets and heavy investment. Although the daily fresh pre-warehouse mode can improve the efficiency of cold chain logistics and achieve the fastest delivery time, it is the core competitiveness of the enterprise, but the pre-warehouse mode also restricts the development of daily fresh.

4. Daily fresh cold chain supply innovation model

4.1 Establish cooperative relations with upstream and downstream enterprises to promote the ecological development of the industry.

With the help of the Internet, upstream and downstream enterprises in the supply chain can establish a supply chain management platform for information resource sharing, establish a long-term stable cooperative relationship with suppliers, and solve the problem

of accelerated amplification of demand variation. Establish a unified standard, implement effective and strict supervision of suppliers, and at the same time consider the profit income of upstream and downstream enterprises in the supply chain, establish a community of shared interests and risks, provide better services for consumers, and promote the rapid development of the cold chain industry.

4.2 Strengthen the construction of upstream infrastructure in the supply chain, and do a good job of ' the first kilometer ' preservation measures.

In the distribution of goods, the arrival of the ' first kilometer ' is particularly important. The ' first kilometer ' of fresh agricultural products cold chain logistics is the initial distribution stage of fresh agricultural products provided by producers to be transported by logistics after the procurement contract between suppliers and producers of fresh agricultural products is signed. China 's cold chain infrastructure structure is unbalanced, and the cold chain infrastructure in the third and fourth tier cities and rural areas is weak. Then China 's main fresh agricultural products are mostly produced in the third and fourth tier cities and rural areas. These products have become the purchase channels of suppliers.

4.3 Reasonable allocation of resources, effectively reduce the cost of front warehouse

Due to the huge operating costs of the pre-warehouse, many experts are highly concerned about the cost reduction of the pre-warehouse. First, enterprises can cooperate with third-party logistics companies for a long time, benefit and share responsibilities, and jointly complete the ' last mile ' delivery problem. Enterprises can consider the balance between self-built logistics costs and third-party logistics costs and formulate appropriate strategies. Second, many enterprises are now paying attention to whether they can use social resources to reduce their own costs.

5. Conclusion

Fresh e-commerce companies need better products, better supply chains, and better models. This paper analyzes the current situation and dilemma of the development of cold chain logistics of fresh e-commerce with daily fresh food as a case, so as to find out the commonness of the development of cold chain logistics. Even if the daily fresh food falls, the domestic fresh e-commerce competition is still fierce. Therefore, fresh e-commerce should start from four aspects : green cold chain logistics, intelligent fresh agricultural products, short chain circulation and ecological cold chain industry, so as to solve the dilemma of cold chain logistics and transportation of fresh agricultural products, explore a mature business model, and promote the healthy development of fresh industry.

References

- [1] Zhang XC, Hodi. Research on the weak links and countermeasures of cold chain logistics of fresh agricultural products in China [J]. *Agricultural economy and management*, 2021 (03) : 93-102.
- [2] Oriental, Yishaohua, Qin XH. The realistic logic, key problems and countermeasures of the development of cold chain logistics in community fresh retail business-based on the dual perspective of new consumption demand and service improvement [J]. *Contemporary economic management*, 2021, 43 (11): 27-34.
- [3] Du ZX. Agricultural and rural modernization: connotation analysis, problem challenges and realization path [J]. *Journal of Nanjing Agricultural University (Social Science Edition)*, 2021, 21 (05): 1-10.
- [4] Zan MY, Chen G, Wang ZB. The development process, realistic dilemma and coping strategies of fresh e-commerce in China [J]. *Economic issues*, 2020 (12): 68-74.
- [5] Yin S. Exploring the development path of cold chain logistics based on China's current situation [J]. *China Storage and Transportation*, 2022 (11): 205-207.
- [6] Zhang L. Analysis of cold chain logistics and its application in food [J]. *Modernization of shopping malls*, 2018 (13): 48-49.